Customer Needs Analysis:
How Scientist and Engineers can focus on the things that really matters to the Customer

Sydney Edwards, PhD
Key points

• How scientist and engineers can become more effective communicators by using Customer Needs analysis & Storytelling

• Learn from
  • Steve Jobs & Apple Computer – Customer centric branding
  • Steve Blank’s Customer Discovery & Development method
  • Tillman Gerngross – focus on Customer Needs
  • Allergan Portfolio Management – use of Customer Needs Analysis
  • Take-aways that you can use
Apple uses poetry and art to connect w customers.

We don’t read and write poetry because it’s cute. We read and write poetry, because we are members of the human race. And the human race is filled with passion. And medicine, law, business, engineering — these are noble pursuits and necessary to sustain life. But poetry, beauty, romance, love — these are what we stay alive for.
Apple video
Development of New Technology involves Connecting with the Customer

Traditional approach

Customer Needs & Problem/Solution definition

Source: Steve Blank, 4 Steps to the Epiphany & The Lean Startup
Shortcomings of traditional method

Problem faced by science based entrepreneurs:

• Often our technical skills dictate the problems we focus on

• We disregard the quality of the problem we are trying to solve

• Pursue solutions looking for a problem

• Assumes build it and they will come mindset
Benefits of a Customer Needs Analysis

The challenge of the scientific entrepreneur is to absorb information, process it and synthesize something new that serves relevant customer needs.

As a scientific entrepreneur not all problems are worth solving, and your job is to figure out which one are. That is, what problems and solutions customers care about.

Source: It’s the problem stupid, Nature, Bioentrepreneur
Lebanon, New Hampshire
Tillman Gerngross, PhD Dartmouth Professor

A serial entrepreneur learns that world’s most exciting, groundbreaking technology is pointless if it is unable to address an urgent and relevant need

“It’s the problem, Stupid!”

Nature Biotechnology 30, 742-744 (2012)
Customer Analysis

Problem faced by Customers

The production of humanized glycoproteins drugs in yeast is attractive but technically complex for pharma and biotech companies.

Solution to the Customer Need

Re-engineer yeast to allow it to make fully human glycoproteins.
A private biotech company in Lebanon, N.H., GlycoFi Inc., has been purchased by Merck & Co. Inc., for $400 million in an all-cash transaction.

GlycoFi is focused on the field of yeast glyco-engineering and optimization of biologic drug molecules.
Tillman Gerngross & TLO

Appointed Head of the Entrepreneurship and Technology Transfer Office at Dartmouth

His goal is to make Dartmouth’s Tech Licensing office an enabler of value creation and manage the patent portfolio

Implications for Allergan – Portfolio management as an enabler for value creation & focus on customer needs
Allergan’s Portfolio approach has evolved

<table>
<thead>
<tr>
<th>Generations of Portfolio Management in Life Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Generation</strong></td>
</tr>
<tr>
<td><strong>Purpose</strong></td>
</tr>
<tr>
<td><strong>Perspective</strong></td>
</tr>
<tr>
<td><strong>Impact on decision-making</strong></td>
</tr>
<tr>
<td><strong>Value added</strong></td>
</tr>
<tr>
<td><strong>Role of staff</strong></td>
</tr>
<tr>
<td><strong>Line manager engagement</strong></td>
</tr>
<tr>
<td><strong>Business process</strong></td>
</tr>
<tr>
<td><strong>Era</strong></td>
</tr>
</tbody>
</table>

New Product Strategy for R&D Portfolio Investing

**Needs analysis**
Problem definition, Customers, IP & Technology Solution

**Build**
Experiment w Prototypes thru Collaborations, Vendors

**Funding**
Data generation, Teams, Milestones & Financing
Allergan Repurposing: Botulinum Toxin A

Botulinum toxin is a therapeutic protein drug

Problem: Unmet need for chronic migraine headache treatments

Solution: Large clinical trials required to test BOTOX® as an injectable treatment

2010 FDA Approves BOTOX® for Chronic Migraine Headache

2012 Allergan acquires MAP Pharma for $958 million; Levadex Inhaler for Acute Migraine

Acquisition will expand Allergan Leadership Position in Neurology and Migraine Specialty
Allergan Entrepreneurial Portfolio approach: Repurposing of Bimatoprost

2001 Lumigan approved for Glaucoma

Problem - Could we repurpose Bimatoprost for use as an eyelash growth drug and obtain FDA approval?

Ocularly applied bimatoprost 0.03% is associated with increased eyelash growth

Allergan begins funding of Ph3 study in 2006; Global Development team led by S Edwards

Dec 2008 - FDA approves Bimatoprost 0.03% for increased eyelash growth based on Phase 3 study

2012 Product Sales ~$100 Million
Greater emphasis on the patient needs analysis to drive the product concept description & portfolio.

The whole process:

- Need
- Need
- Need
- Need
- Need
- Need
- Need
- Need
- Need
- Need
- Need
- Need
- Need
- Need
- Need
- Concept
- Concept
- Concept
- Concept
- Concept
- Concept
- Concept
- Concept
- Concept
- Concept
- Concept
- Concept
- Concept
- Concept
- Concept
- Concept
- Concept
- Concept
- Concept
- Concept
- Concept
- Concept
- Concept
- Concept

FINAL CONCEPT
Innovation approach for Allergan: Combine Silicon Valley + Lean Startup ideas

An approach for translating science to commercial practice

Focus on the problem that customers care about solving

Technology solution - is it differentiated?

Technology - is it practical or over-shoot the needs?

Technology solution - is it patentable?

Measurement - how do you provide convincing data?

Technology needs to follow the customer’s problem
Steve Jobs: Secret of Life

Believe in your ideas and connect with others to improve it
Steve Jobs video
Q&A